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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,230	11/19/2003	Ronald W. Hall	10971833-3	6942

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EXAMINER	
LIANG, LEONARD S	

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/717,230	HALL ET AL.
	Examiner	Art Unit
	Leonard S. Liang	2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 November 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/19/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification and Drawings

The lengthy specification and drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification and drawings.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 19-25 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of Hall et al (U.S. Patent No. 6322207). Although the conflicting claims are not identical, they are not patentably distinct from each other because they substantially claim the same subject matter. Specifically, both Hall et al and the present application disclose a pump module for us with an ink jet printer; an air purge apparatus for allowing the removal of air trapped within the pump module where the air purge apparatus includes a septum valve; a pump actuator; a variable volume chamber; a docking bay; and a keying feature in the pump module interacting with a keying feature in the docking bay.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 19-25, 28-30, and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt et al (US Pat 5732751) in view of Powers et al (US Pat 6139138).

Schmidt et al discloses:

- {claim 19} A method of providing ink to a printing system (abstract), the printing system including a first fluid inlet for receiving pressurized ink (figure 2, reference 42); coupling a pump module to the first fluid inlet (figure 2; through fluid outlet 28); the pump module including a second fluid inlet for receiving ink (figure 3, reference 60); a pressurizing apparatus for increasing the fluid pressure of the ink before providing the ink to the first fluid inlet (figure 3, reference 26); coupling an ink container to the second fluid inlet (figure 3, reference 24)
- {claim 20} pump actuator and actuating the pump actuator to move linearly to engage the pressurizing apparatus to provide pressurized ink at the first fluid inlet (figure 2, reference 40)
- {claim 21} wherein the pressurizing apparatus includes a variable volume chamber having a chamber volume and wherein the step of actuating the pump actuator includes: increasing the chamber volume to draw ink into the variable

volume chamber from the ink container; and decreasing the chamber volume to expel pressurized ink from the variable volume chamber through the first fluid inlet of the pump module (column 4, lines 16-34)

- {claim 23} removing a protective cap on the ink container to expose a fill port for filling the ink container with an initial quantity of ink; removing a plug from the fill port; refilling the ink container with a quantity of refill ink; and inserting a plug into the fill port to prevent refill ink leakage from the ink container (column 3, lines 13-20)
- {claim 24} wherein the printing system includes a docking bay for the first fluid inlet, and wherein the step of coupling the pump module to the first fluid inlet includes inserting the pump module into the docking bay of the printing system (figure 2, reference 132)
- {claim 25} wherein the pump module includes keying features and the docking bay includes corresponding keying features, and wherein the step of inserting the pump module into the docking bay includes: engaging the keying features of the pump module with the corresponding keying features of the docking bay to ensure the pump module is properly oriented upon insertion of the pump module into the docking bay (figure 1, reference 116, 118; figure 2, reference 134; column 5, lines 43-48)
- {claim 28} A method for providing ink to a printing system (abstract), the printing system including a plurality of fluid inlets (figure 2, reference 42); coupling a pump module to the plurality of fluid inlets, the pump module

including a plurality of fluid outlets that engage the plurality of fluid inlets, and a plurality of pressurizing apparatuses for increasing the fluid pressure of the ink before providing ink to the plurality of fluid inlets (figure 2, reference 28; figure 3, reference 26); and coupling a plurality of ink containers having fluid outlets to the pump module, the pump module including a plurality of fluid inlets that receive the fluid outlets of the plurality of ink containers (figure 2, reference 42, 28; figure 3, reference 60)

- {claim 29} wherein the printing system includes a docking bay for the printing system fluid inlets, and wherein the step of coupling the pump module to the plurality of fluid inlets comprises: inserting the pump module into the docking bay of the printing system (figure 2, reference 132)
- {claim 30} wherein the pump module includes keying features and the docking bay includes corresponding keying features, and wherein the step of inserting the pump module into the docking bay includes: engaging the keying features of the pump module with the corresponding keying features of the docking bay to ensure the pump module is properly oriented upon insertion of the pump module into the docking bay

Schmidt et al differs from the claimed invention in that it does not disclose:

- {claims 19 and 33} an air purge apparatus; removing air trapped within the pump module using the air purge apparatus
- {claims 22 and 34} wherein the air purge apparatus includes a septum, and wherein the step of removing air trapped within the pump module includes:

inserting a hollow member through the septum; and applying vacuum pressure to the hollow member to draw air trapped from the air purge apparatus

Powers et al discloses:

- {claims 19 and 33} an air purge apparatus; removing air trapped within the pump module using the air purge apparatus (abstract)
- {claims 22 and 34} wherein the air purge apparatus includes a septum, and wherein the step of removing air trapped within the pump module includes: inserting a hollow member through the septum; and applying vacuum pressure to the hollow member to draw air trapped from the air purge apparatus (column 4, lines 21-49)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Powers et al into the invention of Schmidt et al. The motivation for the skilled artisan in doing so is to gain the benefit of removing air and gas bubbles from an ink jet pen (column 1, lines 50-51).

Claims 26-27 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt et al (US Pat 5732751) in view of Powers et al (US Pat 6139138), as applied to claims 19-25, 28-30, and 33-34 above, and further in view of Hall et al (US Pat 6322207).

Schmidt et al, as modified, differs from the claimed invention in that it does not disclose:

- {claims 26-27} wherein the pump module includes further keying features and the ink container includes corresponding keying features, and wherein the step of coupling the ink container to the second fluid inlet includes: engaging the

corresponding keying features of the ink container with the further keying features of the pump module to prevent an incompatible ink container from being coupled to the second fluid inlet

- {claims 31-32} wherein the pump module includes further keying features and each of the plurality of ink containers includes corresponding keying features, and wherein the step of inserting the plurality of ink containers into the pump module includes: engaging the corresponding keying features of each of the plurality of ink containers with the further keying features of the pump module to prevent an incompatible ink container from being inserted to the pump module

Hall et al discloses:

- {claims 26-27} wherein the pump module includes further keying features and the ink container includes corresponding keying features, and wherein the step of coupling the ink container to the second fluid inlet includes: engaging the corresponding keying features of the ink container with the further keying features of the pump module to prevent an incompatible ink container from being coupled to the second fluid inlet (column 16, lines 3-24)
- {claims 31-32} wherein the pump module includes further keying features and each of the plurality of ink containers includes corresponding keying features, and wherein the step of inserting the plurality of ink containers into the pump module includes: engaging the corresponding keying features of each of the plurality of ink containers with the further keying features of the pump module to

prevent an incompatible ink container from being inserted to the pump module (column 16, lines 3-24)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Hall et al into the invention of modified Schmidt et al. The motivation for the skilled artisan in doing so is to gain the benefit of making sure the proper ink container is attached to the pump, thus producing better print quality (column 16, lines 6-11).

Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashio (US Pat 3950761) in view of Powers et al (US Pat 6139138).

Kashio et al discloses:

- {claim 19} A method of providing ink to a printing system (figure 1), the printing system including a first fluid inlet for receiving pressurized ink (one end of reference 8); coupling a pump module to the first fluid inlet, the pump module including a second fluid inlet for receiving ink, a pressurizing apparatus for increasing the fluid pressure of the ink before providing the ink to the first fluid inlet (abstract; figure 1, reference 1 for pressurizing apparatus; figure 1, reference 2 for second fluid inlet); coupling an ink container to the second fluid inlet (figure 1, reference 2, 5)
- {claim 20} pump actuator and actuating the pump actuator to move linearly to engage the pressurizing apparatus to provide pressurized ink at the first fluid inlet (figure 1, reference 11; column 2, line 50-column 3, line 27)

- {claim 21} wherein the pressurizing apparatus includes a variable volume chamber having a chamber volume and wherein the step of actuating the pump actuator includes: increasing the chamber volume to draw ink into the variable volume chamber from the ink container; and decreasing the chamber volume to expel pressurized ink from the variable volume chamber through the first fluid inlet of the pump module (figure 1, reference 11; column 2, line 50-column 3, line 27)
- {claim 23} removing a protective cap on the ink container to expose a fill port for filling the ink container with an initial quantity of ink; removing a plug from the fill port; refilling the ink container with a quantity of refill ink; and inserting a plug into the fill port to prevent refill ink leakage from the ink container (figure 1, reference 9; column 2, line 50 – column 3, line 1)
- {claim 24} wherein the printing system includes a docking bay for the first fluid inlet, and wherein the step of coupling the pump module to the first fluid inlet includes inserting the pump module into the docking bay of the printing system (figure 2, reference 13)

Schmidt et al differs from the claimed invention in that it does not disclose:

- {claims 19 and 33} an air purge apparatus; removing air trapped within the pump module using the air purge apparatus
- {claims 22 and 34} wherein the air purge apparatus includes a septum, and wherein the step of removing air trapped within the pump module includes:

inserting a hollow member through the septum; and applying vacuum pressure to the hollow member to draw air trapped from the air purge apparatus

Powers et al discloses:

- {claim 19} an air purge apparatus; removing air trapped within the pump module using the air purge apparatus (abstract)
- {claim 22} wherein the air purge apparatus includes a septum, and wherein the step of removing air trapped within the pump module includes: inserting a hollow member through the septum; and applying vacuum pressure to the hollow member to draw air trapped from the air purge apparatus (column 4, lines 21-49)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Powers et al into the invention of Schmidt et al. The motivation for the skilled artisan in doing so is to gain the benefit of removing air and gas bubbles from an ink jet pen (column 1, lines 50-51).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pawlowski, Jr. et al (US Pat 5812168) discloses air purging of a pressure regulated free-ink ink-jet pen.

Pawlowski, Jr. et al (US Pat 5975689) discloses an air purge apparatus for inkjet print cartridges.

Hall et al (US Pat 5841454) discloses an ink-jet pen gas separator and purge system.

Kojima (US Pat 6152559) discloses an ink-jet printing device having purging arrangement.

Takata (US Pat 6247782) discloses an ink jet recording device capable of reliably discharging air bubble during purging operations.

Seccombe (US Pat 6257714) discloses a method and apparatus for removing air from an inkjet print cartridge.

Pietrzyk (US Pat 5815185) discloses an ink flow heat exchanger for inkjet printhead.

Askren et al (US Pat 6481837) discloses an ink delivery system.

Seccombe (US Pat 5812155) discloses an apparatus for removing air from an ink-jet print cartridge.

Tracy et al (US Pat 5808643) discloses air removal means for ink jet printers.

Piatt et al (US Pat 4494124) discloses an ink jet printer.

Hermanson et al (US Pat 5341162) discloses a liquid degassing apparatus.

Hine et al (US Pat 5557305) discloses an ink jet purging arrangement.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S. Liang whose telephone number is (571) 272-2148. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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